

**Directive No.** 97-09      **Date** July 29, 1997

**Subject** **Off-Shore Lumber Volume Calculation**

**Purpose** To ensure accurate volume calculations for exported lumber cut to metric specifications.

**Policy** Volumes must be calculated in different ways for North American and off-shore markets. Off-shore markets use actual lumber dimensions where North Americans use nominal dimensions. There is no simple relationship between the two systems, therefore the foot board measure used for nominal dimension lumber calculations must not be used for off-shore lumber. (For example, a 2" by 4" nominal size is in reality approximately 1<sup>1/2</sup>" by 3<sup>1/2</sup>" actual size).

**Procedure** The following explanations and examples should provide guidance when dealing with off-shore metric lumber.

**Timber Volume**

For off-shore markets, if lumber sales volume is used to calculate timber volume, the dimensions specified on the shipping order should be used. For example, an order of 1000 pieces measuring 42mm X 150mm X 3.8m would be calculated as:

$$\text{Volume of Actual Lumber} = 1000 \times 0.042\text{m} \times 0.150\text{m} \times 3.8\text{m} = \mathbf{23.94\text{m}^3}$$

**Lumber sale dimensions must be expressed in metric volumes.**

**Dimension Tolerances**

Most lumber produced for overseas markets is sold cut to rough dimensions. Before calculating dimension tolerances it is useful to find out what sizes were ordered. Use the target size of the order as a minimum tolerance, remembering that the board may still be re-manufactured overseas. Maximum tolerance will allow 6mm for sawing variation and a 5% (of order size) allowance for shrinkage. As an example, a 100mm order size could be cut to 111mm as shown below.

$$\text{Maximum Tolerance} = 100\text{mm} + (5\% \times 100\text{mm}) + 6\text{mm} = \mathbf{111\text{mm}}$$

**Trim Allowances**

Some orders may request additional trim over the length specified. The Scaling Classes in the Alberta Scaling Manual usually allow for such an addition without a change in scale volume. For example, if an order specifies 3.0m length, the manual allows up to 3.1m length plus 0.05m for trim, for a maximum of 3.15m.

If logs are bucked to North American lengths (e.g. 3.6m logs) and lumber is being trimmed to off-shore specifications (e.g. 3.0m), operators may be employing excessive trim practices. If this is suspected the off-shore order must be reviewed to determine what sizes are being specified to confirm excessive trim. These cases should be reported to the Provincial Scaling Co-ordinator for review.

**Lumber Recovery Factors**

The volume of log scale timber being used to manufacture 50.0m<sup>3</sup> of lumber in the above example, using the average sawmill recovery rate of 50 per cent for rough lumber from a log, would be calculated as follows:

$$\text{Log Scale Equivalent (m}^3\text{)} = 50.0\text{m}^3 \div 50\% = \mathbf{100.0\text{m}^3}$$

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**Definitions**

**Actual size** - the actual measured dimensions of lumber, normally associated with finished lumber.

**Nominal size** - an accepted North American market measurement standard, generally associated with finished wood products.

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**Authorities**

**Section 100(e) of the Timber Management Regulation** - Excessive waste shall be avoided when removing or manufacturing timber.

**Section 113 of the Timber Management Regulation** - Timber must be measured and recorded before shipment.

**Alberta Scaling Manual** - outlines procedures in determining timber volumes.

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